



U.S. Department of Energy
Office of River Protection
Mr. R. J. Schepens
Manager
P.O. Box 450, MSIN H6-60
Richland, Washington 99354

CCN: 102516

NOV 15 2004

Dear Mr. Schepens:

CONTRACT NO. DE-AC27-01RV14136 -- CLOSURE OF PRELIMINARY SAFETY ANALYSIS REPORT (PSAR) UPDATE CONDITION OF ACCEPTANCE (COA) RELATED TO THE HIGH-LEVEL WASTE (HLW) AND PRETREATMENT (PT) FACILITY STRUCTURAL DESIGN

Reference: CCN 096295, Letter, from R. J. Schepens, ORP, to J. P. Henschel, BNI, "U.S. Department of Energy (DOE) Notice to Proceed with Analytical Laboratory Construction Activities," 04-WTP-171, dated July 29, 2004.

This letter provides closure information for one of the Conditions of Acceptance (COA) contained in ORP/OSR-2003-01, Revision 2, dated July 29, 2004 (reference letter), Appendix, Section 6.1, Item 2. The COA reads as follows:

"With issuance of this SER, for SC-I and SC-II primary building structural components (which are modeled in SASSI), the Contractor commits to using a time-history or a response spectrum analysis method to calculate the design basis seismic loads for the steel structural components, anchors of steel structural components, and concrete structural components to ensure that the multi-mode response effects are accounted for. Before any other method is used, the Contractor must perform and document a safety evaluation justifying the method. Although this new COA was identified during the review of the HLW PSAR, the issue also applies to the design of the PT facility, and therefore the COA also applies to PT."

Bechtel National, Inc. (BNI) has issued Revision 1 to the Seismic Analysis and Design Criteria document (24590-WTP-DC-ST-04-001) to address this COA. Section 7.2.1.8 of this document, "SSI Structural Responses," now reads, in part, as follows:

"Structural responses in terms of shears, moments, etc., due to seismic loads in all three directions (two horizontal and one vertical direction) shall be computed by static analysis of the building structure. The total response shall be obtained by combining the three co-directional responses by the "Component Factor Method (1/0.4/0.4)" illustrated by equation (3.2-26) of ASCE 4. The static analysis shall be performed by applying

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equivalent static inertia loads at the mass locations. The inertia load shall be calculated as the product of the mass and seismic acceleration obtained from the SSI analysis. The SSI acceleration value shall represent the envelope value of accelerations obtained using the best estimate, lower bound and the upper bound soil properties.

The Pretreatment and High Level Waste Vitrification Building structures are composed of reinforced concrete as well as structural steel components. Structural responses of concrete components calculated by the foregoing method are expected to be conservative. However, structural responses of steel components and their anchorages shall be computed by dynamic analysis using either the response spectrum or time history approach; for use of an alternate method, a safety evaluation justifying the method shall be prepared and documented."

Based on the information provided above, BNI requests closure of this COA.

If you have questions or need additional information, please contact Mr. Bill Spezialetti at 371-3074 or Mr. Steve Woolfolk at 371-3404.

Very truly yours,

A handwritten signature in black ink, appearing to read "J. P. Henschel". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

J. P. Henschel
Project Director

TBR/slr